

WHAT IS CLAIMED IS:

1. A system for remotely activating a deployed device, the deployed device having a load and a battery, the system comprising:
  - (a) a transmitter, remote from the deployed device, for generating an AC magnetic field; and
  - (b) a receiver disposed at the deployed device, the receiver including
    - (i) an antenna and a voltage detector coupled to said antenna for sensing the AC magnetic field and generating an output signal in response to the sensed AC magnetic field, and
    - (ii) a switch coupled in series with the load and the battery, said switch being responsive to said output signal to couple the battery to the load, thereby activating the deployed device.
2. The system as claimed in claim 1, wherein the AC magnetic field has a predetermined frequency and the antenna is a tuned antenna tuned to the predetermined frequency.
3. The system as claimed in claim 2, wherein the tuned antenna includes an induction coil and a tuning capacitor.
4. The system as claimed in claim 1, wherein said voltage detector only generates said output signal when the sensed AC magnetic field induces a voltage in said antenna and said voltage exceeds a threshold voltage.

5. The system as claimed in claim 4, wherein said voltage detector includes at least one semiconductor device, said semiconductor device having a cutoff mode and an active mode, and wherein said semiconductor device operates in said cutoff mode when said induced voltage is below the threshold voltage, and operates in said active mode when said induced voltage is above the threshold voltage.
6. The system as claimed in claim 4, wherein said voltage detector includes a rectifier and an amplifier, and said amplifier produces said output signal.
7. The system as claimed in claim 6, wherein said rectifier includes a semiconductor junction.
8. The system as claimed in claim 7, wherein said semiconductor junction is a base-emitter junction of a transistor.
9. The system as claimed in claim 4, wherein said voltage detector includes a first transistor having its base-emitter junction coupled in parallel with said antenna, and a second transistor having its base coupled to the collector of said first transistor, and wherein the collector of said second transistor is coupled to said switch and provides said output signal.
10. The system as claimed in claim 9, wherein said voltage detector further includes a delay circuit coupled between the collector of said second transistor and said switch.
11. The system as claimed in claim 9, wherein said delay circuit includes an integrator for integrating said output signal and said integrator includes an output resistor and an output capacitor.

12. The system as claimed in claim 9, wherein the emitter of said first transistor is coupled to a terminal of the battery and the emitter of said second transistor is coupled to an opposing terminal of the battery.
13. The system as claimed in claim 9, wherein said first transistor is an NPN transistor and said second transistor is a PNP transistor.
14. The system as claimed in claim 9, wherein said first transistor is a PNP transistor and said second transistor is an NPN transistor.
15. The system as claimed in claim 1, wherein said switch includes a semiconductor device.
16. The system as claimed in claim 15, wherein said semiconductor device has an active mode and a cutoff mode, and wherein said semiconductor device couples the load to the battery when in said active mode, and decouples the load from the battery when in said cutoff mode.
17. The system as claimed in claim 1, wherein said switch is selected from the group including a field effect transistor, a bipolar junction transistor, and a relay.
18. The system as claimed in claim 1, wherein said voltage detector senses the AC magnetic field when said transmitter is up to 10 meters distant from said receiver.
19. The system as claimed in claim 18, wherein said voltage detector senses the AC magnetic field when said transmitter is up to 100 meters distant from said receiver.

20. The system as claimed in claim 1, wherein said receiver consumes less than 100 nW of power when said switch is open.
21. A device for remote deployment, having both an active mode and a standby mode, the device switching from the standby mode to the active mode in response to the sensing of an AC magnetic field transmitted from a remote transmitter, the device comprising:
- (a) a load;
  - (b) a battery; and
  - (c) a receiver including
    - (i) an antenna and a voltage detector coupled to said antenna for sensing the AC magnetic field and for generating an output signal in response to the sensed AC magnetic field, and
    - (ii) a switch coupled in series with the load and the battery, said switch being responsive to said output signal to couple the battery to the load, thereby activating the deployed device.
22. The device as claimed in claim 21, wherein the AC magnetic field has a predetermined frequency and the antenna is a tuned antenna tuned to the predetermined frequency.
23. The device as claimed in claim 22, wherein the tuned antenna includes an induction coil and a tuning capacitor.

24. The device as claimed in claim 21, wherein said voltage detector only generates said output signal when the sensed AC magnetic field induces a voltage in said antenna and said induced voltage exceeds a threshold voltage.
25. The device as claimed in claim 24, wherein said voltage detector includes at least one semiconductor device, said semiconductor device having a cutoff mode and an active mode, and wherein said semiconductor device operates in said cutoff mode when said induced voltage is below the threshold voltage, and operates in said active mode when said induced voltage is above the threshold voltage.
26. The device as claimed in claim 24, wherein said voltage detector includes a rectifier and an amplifier, and said amplifier produces said output signal.
27. The device as claimed in claim 26, wherein said rectifier includes a semiconductor junction.
28. The device as claimed in claim 27, wherein said semiconductor junction is a base-emitter junction of a transistor.
29. The device as claimed in claim 24, wherein said voltage detector includes a first transistor having its base-emitter junction coupled in parallel with said antenna, and a second transistor having its base coupled to the collector of said first transistor, and wherein the collector of said second transistor is coupled to said switch and provides said output signal.
30. The device as claimed in claim 29, wherein said voltage detector further includes a delay circuit coupled between the collector of said second transistor and said switch.

31. The device as claimed in claim 30, wherein said delay circuit includes an integrator for integrating said output signal and said integrator includes an output resistor and an output capacitor.
32. The device as claimed in claim 29, wherein the emitter of said first transistor is coupled to a terminal of said battery and the emitter of said second transistor is coupled to an opposing terminal of said battery.
33. The device as claimed in claim 29, wherein said first transistor is an NPN transistor and said second transistor is a PNP transistor.
34. The device as claimed in claim 29, wherein said first transistor is a PNP transistor and said second transistor is an NPN transistor.
35. The device as claimed in claim 21, wherein said switch includes a semiconductor device.
36. The device as claimed in claim 35, wherein said semiconductor device has an active mode and a cutoff mode, and wherein said semiconductor device couples said load to said battery when in said active mode, and decouples said load from said battery when in said cutoff mode.
37. The device as claimed in claim 1, wherein said switch is selected from the group including a field effect transistor, a bipolar junction transistor, and a relay.
38. The device as claimed in claim 21, wherein said voltage detector senses the AC magnetic field when the transmitter is up to 10 meters distant from said receiver.

39. The device as claimed in claim 38, wherein said voltage detector senses the AC magnetic field when the transmitter is up to 100 meters distant from said receiver.

40. The device as claimed in claim 39, wherein said receiver consumes less than 100 nW of power when said switch is open.

3

41. A system for remotely activating a deployed device, the deployed device having a load and a battery, the system comprising:

(a) transmitter means, remote from the deployed device, for transmitting an AC magnetic field; and

(b) receiver means disposed at the deployed device for receiving the AC magnetic field and for coupling the load to the power source in response to the AC magnetic field, said receiver means including

(i) field detection means for detecting the AC magnetic field and generating an output signal in response to the sensed AC magnetic field, and

(ii) coupler means coupled in series with the load and the battery, said coupler means being responsive to said output signal to couple the battery to the load, thereby activating the deployed device.

42. The system as claimed in claim 41, wherein said field detection means includes an antenna and voltage detector means for detecting a voltage induced in said antenna by the AC magnetic field, said voltage detector means further including means for generating the output signal when said induced voltage exceeds a threshold voltage.

43. The system as claimed in claim 42, wherein said voltage detector means has an active mode and a standby mode, and wherein said voltage detector means operates in said standby mode until said induced voltage exceeds said threshold, whereupon said voltage detector means operates in said active mode.
44. The system as claimed in claim 43, wherein said voltage detector means is coupled to the battery, and wherein said voltage detector means and said coupler means consume less than 100 nW when in said standby mode.
45. The system as claimed in claim 42, wherein said voltage detector means includes rectifier means for rectifying the induced voltage in said antenna to produce a rectified signal, and amplification means for amplifying said rectified signal to produce said output signal.
46. The system as claimed in claim 45, wherein said rectifier means includes means for preventing production of the rectified signal unless the induced voltage exceeds the threshold.
47. The system as claimed in claim 42, further including a integrator means coupled between said voltage detector means and said coupler means for integrating said output signal so as to trigger said coupler means when said output signal has been generated for a predetermined minimum time.